

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously presented) A low resistivity silicon electrode adapted to be mounted in a plasma reaction chamber used in semiconductor substrate processing, comprising:
a silicon electrode comprising a showerhead electrode having a plurality of gas outlets arranged to distribute process gas in the plasma reaction chamber during use of the showerhead electrode, the electrode having a thickness of about 0.3 inch to 0.5 inch and an electrical resistivity of less than 1 ohm-cm, the electrode having an RF driven or electrically grounded surface on one side thereof, the surface being exposed to plasma in the plasma reaction chamber during use of the electrode.

Claim 2 (Canceled)

3. (Previously presented) The electrode of Claim 1, wherein the gas outlets have diameters of 0.020 to 0.030 inch and the gas outlets are distributed across the exposed surface.

4. (Original) The electrode of Claim 1, wherein the electrode comprises single crystal silicon or silicon carbide having heavy metal contamination of less than 10 parts per million.

5. (Original) The electrode of Claim 1, wherein the electrode comprises an electrically grounded upper electrode of a parallel plate plasma reactor.

6. (Original) The electrode of Claim 1, wherein the electrical resistivity of the electrode is less than 0.1 ohm-cm.

7. (Original) The electrode of Claim 1, wherein the electrical resistivity of the electrode is less than 0.05 ohm-cm.

8. (Original) A plasma etch reactor having an electrode assembly which includes the electrode of Claim 1, the electrode being bonded to a support member by an elastomeric joint, the elastomeric joint comprising an electrically conductive elastomeric material between the electrode and the support member, the elastomeric material including an electrically conductive filler which provides an electrical current path between the electrode and the support member.

9. (Original) A plasma etch reactor having an electrode assembly which includes the electrode of Claim 1, the electrode being resiliently clamped to a support member by a clamping member.

10. (Previously presented) A plasma reaction chamber including the showerhead electrode of Claim 1, the showerhead electrode being bonded or clamped to a temperature-controlled member in an interior of the plasma reaction chamber, the temperature-controlled member including a gas passage supplying a process gas to the showerhead electrode, the temperature-controlled member including a cavity and at least one baffle plate located in the cavity, the gas passage supplying process gas so as to pass through the baffle prior to passing through the showerhead electrode.

Claims 11-20 (Canceled)

21. (Currently amended) ~~The electrode of Claim 1, further comprising a backing plate elastomer bonded to the electrode.~~ A low resistivity silicon electrode adapted to be mounted in a plasma reaction chamber used in semiconductor substrate processing, comprising:

a silicon electrode comprising a showerhead electrode having a plurality of gas outlets arranged to distribute process gas in the plasma reaction chamber during use of the showerhead electrode, the electrode having a thickness of about 0.3 inch to 0.5 inch and an electrical resistivity of less than 1 ohm-cm, the electrode having an RF driven or

electrically grounded surface on one side thereof, the surface being exposed to plasma in the plasma reaction chamber during use of the electrode; and
a backing plate elastomer bonded to the electrode.

Claim 22 (Canceled)

23. (Previously presented) The electrode of Claim 21, wherein the backing plate includes gas distribution holes communicating with the gas outlets in the electrode.

Claim 24 (Canceled)

25. (Previously presented) The electrode of Claim 21, wherein the backing plate is of aluminum, aluminum alloy, silicon carbide or graphite.

Claim 26 (Canceled)

27. (Previously presented) The electrode of Claim 1, wherein the gas outlets comprise ultrasonically drilled holes.

28. (Previously presented) The electrode of Claim 1, further comprising a support member bonded to the electrode.

29. (Previously presented) The electrode of Claim 28, wherein the support member comprises a plate, cylinder or projections on a base member.

30. (Previously presented) The electrode of Claim 1, having a thickness of about 0.375 to 0.5 inch.